REMARKS

By way of the foregoing amendments, claims 1-34 have been amended to place them in better form for examination and claim 35 added. No new matter has been added. Support for the amended and the new claims can be found, for example, in at least the following: the original claims, written description and figures.

Early and favorable consideration with respect to this application is respectfully requested.

Should any questions arise in connection with this application, the undersigned respectfully requests that he be contacted at the number indicated below.

Respectfully submitted,

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1. (Amended) Process for the production of a rotor of a synchronous machine, containing permanent magnets [(2)], the [said] rotor having a core [(1, 35)] of ferromagnetic steel, on and connected to which core [(1, 35)] are permanent magnets [(2)] which in their turn are surrounded by an outer cylinder [(3)] of a non-magnetizable material, and which rotor has at both axial ends a closure disk [plates (4, 5)] of a non-magnetizable steel with a stub shaft [shafts (6, 7)], wherein the core [(1, 35)] is constituted with an internal space [(8, 36) and], the process comprising:

introducing a resin mass [is introduced] into the internal space [(8, 36), the];

supplying said resin mass [being supplied] to [the] a region of the permanent magnets [(2)] by centrifuging the rotor[, in which region]; and

hardening of the resin mass [takes place] in the region of the permanent magnets.

2. (Amended) Process according to claim 1, further comprising:

[wherein the rotor with the introduced resin mass is heated] heating and simultaneously [run] running up to a centrifuging speed the rotor with the introduced resin mass, such that the resin mass [being] is conducted outward, due to centrifugal force, from the internal space [(8)] through radial channels [(27)] in the core [(1)], or from the internal space [(36)] through holes [(25)] and longitudinal slots [(26)] in the core [(35)], to the region of the permanent magnets [(2)], and the cavities present there are filled up[,]; and

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[wherein] maintaining the rotor [is kept] at the centrifuging speed during the hardening of the resin mass.

3. (Amended) Process according to claim 1 [or 2, wherein for the assembly of the rotor, the permanent magnets (2) are arranged], further comprising:

arranging the permanent magnets on the core [(1, 35), and the core (1, 35) with the permanent magnets (2) is inserted] by inserting the permanent magnets with play into the outer cylinder [(3)];

[and wherein after the introduction of the resin mass into the internal space (8, 36), a] arranging at each end after the introduction of the resin mass into the internal space the respective closure disk, [plate (4, 5)] each closure disk consisting of non-magnetizable steel with a stub shaft [(6, 7) is arranged at each end of this structure originating from the core (1, 35), permanent magnets (2), outer cylinder (3) and resin mass,] and the core [(1, 35) is] centered in the closure disks [(4,5)]; and

[wherein finally] connecting the outer cylinder [(3) is connected] to the closure disks [(4, 5)].

4. (Amended) Process according to [one of the foregoing claims] claim 1, wherein the [hardenable] resin mass is introduced into the internal space [(8, 36)] in the core [(1, 35)] in the form of a solid rod.

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5. (Amended) Process according to [one of the foregoing claims] claim 1, wherein the resin mass contains at least one filler.

6. (Amended) Process according to [one of the foregoing claims] claim 1, wherein the outer cylinder [(3)] is shrunk onto the closure disks [(4, 5)].

7. (Amended) Process according to claim 6, wherein the shrunk-on outer cylinder [(3)] is connected flush to the closure disks [(4, 5)] by means of a circumferential weld seam [(9)].

8. (Amended) Process according to claim 7, wherein the circumferential weld seam [(9)] is pre-welded in only one pass before the centrifuging of the [adhesive] resin and is only completely after-welded after the hardening of the [adhesive] resin.

9. (Amended) Process according to claim 6, wherein the outer cylinder [(3)] is constituted at both ends with an inner circumferential groove [(10)] and the closure disks [(4, 5)] are constituted with an outer circumferential projection [(11)] and an adjacently arranged outer circumferential groove [(12)] with an inserted O-ring [(13)], and the outer cylinder [(3)] is shrunk onto the closure disks [(4, 5)] such that the respective outer circumferential projection [(11)] of the closure disks [(4, 5)] projects into the respective

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inner circumferential groove [(10)], and the respective O-ring [(13)] abuts the outer cylinder [(3)] flush.

10. (Amended) Process according to [one of claims 1-5] claim 1, wherein the closure disks [(4, 5)] are constituted with a cone-shaped portion [(14)] directed toward the rotor interior, and are pressed into the outer cylinder [(3)], to connect with it, as far as a stop [(15)].

11. (Amended) Process according to [one of the foregoing claims] claim 1, wherein magnetic neutral zones [(37)] are present in annular space portions between the core [(1, 35)] and the outer cylinder [(3)], which neutral zones [(37)] contain no permanent magnets [(2)], and the process further comprises inserting [wherein] filler pieces [(16) are inserted] into [these] said annular space portions, the density of the material of the filler pieces [(16)] being at least approximately equal to the density of the material of the permanent magnets [(2)].

12. (Amended) Process according to [one of the foregoing claims] claim 1, [wherein] further comprising inserting a filler strip [strips (20) are inserted] between adjacent permanent magnets [(2)].

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13. (Amended) Process according to [one of the foregoing claims] claim 1, [wherein] further comprising inserting a further filler strip [strips (21) are inserted] between the permanent magnets [(2)] and the inner circumferential regions of the outer cylinder [(3)] lying opposite said permanent magnets.

14. (Amended) Process according to claim 13, [wherein, in order to form] further comprising:

forming a damping cage[,] by connecting the further filler strips [(21) are connected] at their ends [by spot welding or the like] to a respective flexibly constituted ring [(22) and are arranged];

arranging said further filler strips around the core [(1, 35),]; and

installing the closure disks [(4, 5) are then installed].

15. (Amended) Process according to [one of claims 1-11] claim 1, [wherein] further comprising:

producing a cage [(29)] of an electrically conductive material [is produced,] with end rings [(30)] and axially-running longitudinal rods [(31)] with transverse grooves [(32)] for distributing the [adhesive] resin[, and];

inserting the permanent magnets [(2) are inserted] into the cage [(29)]; and

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[wherein either] pushing the cage [(29)] with the permanent magnets [(2) is pushed] into the outer cylinder [(3),] followed by adhering the permanent magnets [(2) are adhered] to the outer cylinder [(3)] with a provisional adhesive and thereafter pushing the core [(1, 35) is pushed] into the cage [(29)], or pushing the core [(1, 35) is first pushed] into the cage [(29)] and thereafter pushing the outer cylinder [(3) is pushed] over the cage [(29)] with the permanent magnets [(2)].

16. (Amended) Process according to [one of claims 1-14] claim 1, [wherein] further comprising stacking metal sheets [(23) are stacked] on a centering tube [(24) for the production of] to produce the core [(35)], [which] the centering tube [(24) has] having holes [(25)] for the passage of resin mass arranged in [its] the internal space [(36),] and the metal sheets [(23)] having slots [(26)] aligned with the holes [(25)] for the further passage of the [adhesive] resin.

17. (Amended) Process according [to one of claims 1-15] claim 1, wherein the core [(1)] is integral and is constituted with an internal space [(8)], which internal space [(8)] serves as a storage space for the resin mass, and from which internal space [(8)] channels [(27)] are constituted running in a radial direction toward the outside of the core [(1)].

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18. (Amended) Process according to [one of the foregoing claims] claim 1, wherein the core [(1, 35)] is constituted at both axial ends with a polygonal recess [(18)], each closure disk [(4, 5)] being constituted with a polygonal projection [(19)] corresponding to the recesses [(18)] of the core [(1, 35);], and the process further comprises inserting [wherein, in assembling the rotor,] the projections [(19)]are inserted] into the recesses [(18),] during assembly of the rotor in order to form a positive connection for force transmission between the core [(1, 35)] and the closure disks [(4, 5)].

19. (Amended) Process according to [one of the foregoing claims] claim 1, wherein [the outer circumferential surface of] the core [(1, 35) is] has an outer circumferential surface constituted of polygonal shape with many planar surface portions [(17)], the dimensions of each individual surface portion being conformed to the dimensions of the permanent magnets [(2),] so that [on the one hand] a [minimum] magnetic gap [is] formed between the core [(1, 35)] and the permanent magnets [(2)] arranged on the surface portions is minimized [(17)], and [on the other hand an excellent] a predetermined transmission of torque from the permanent magnets [(2)] to the core [(1, 35)] is attained.

20. (Amended) Rotor containing permanent magnets, the rotor comprising: [(2), produced by the process according to claim 1, which has]

a core [(1, 35)] of ferromagnetic steel; [and]

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an internal space [(8, 36)] running axially;[, on which core (1, 35)]

at least one permanent [magnets (2) are] magnet arranged on the core;[, and which is surrounded by]

an outer cylinder [(3)] of non-magnetizable material surrounding the at least one permanent magnet; and [, the said rotor having]

closure disks [(4, 5)] of non-magnetizable steel, each closure disk having a [with] stub [shafts (6, 7), which are] shaft and positively connected to the core [(1, 35)] and at least frictionally connected to the outer cylinder, [(3); and]

wherein after interfusing [the] a resin at least [all] a plurality of the cavities in the region of the permanent [magnets (2)] magnet are filled with [a] the resin [mass] as far as the diameter of the internal space [(8, 36)].

21. (Amended) Rotor according to claim 20, wherein the outer cylinder [(3)] is shrunk onto the closure disks [(4, 5)].

22. (Amended) Rotor according to claim 21, wherein the shrunk-on outer cylinder [(3)] is connected flush to the closure disks [(4, 5)] by means of a circumferential weld seam [(9)].

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23. (Amended) Rotor according to claim 21, wherein the outer cylinder [(3)] has a circumferential groove [(10)] at each end, and the closure disks [(4, 5)] have an outer circumferential projection [(11)] and an adjacently arranged circumferential groove [(12)] with an inserted O-ring [(13)], [with the] said outer circumferential projections [(11)] projecting into the respective inner circumferential groove [(10)] and [the] said O-ring [(13)] abutting the outer cylinder [(3)] flush.

24. (Amended) Rotor according to claim 20, wherein each closure disk [(4, 5)] has a cone-shaped portion [(14)] directed toward the rotor interior and has a shoulder portion [(15)] serving as a stop, [the] said closure disks [(4, 5)] being pressed into the outer cylinder [(3)] and abutting it with the shoulder portion [(15)].

25. (Amended) Rotor according to [one of claims 20-24] claim 20, further comprising:

[with magnetic neutral zones (37) present in the] a plurality of annular space portions between the core [(1, 35)] and the outer cylinder [(3)] defining a plurality of magnetic neutral zones, [the] said neutral zones [(37)] containing no permanent magnets[, wherein]; and

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a plurality of filler pieces [(16) are] arranged in [these] the annular portions, [the density of the material of] the filler pieces [(16) being] having a density at least approximately the same as [the] a density of [the material of] the permanent magnets [(2)].

26. (Amended) Rotor according to [one of claims 20-25, wherein] claim 20, further comprising a filler [strips (20) are] strip arranged between adjacent permanent magnets [(2)].

27. (Amended) Rotor according to [one of claims 20-26, wherein] claim 20, further comprising a further filler [strips (21) are] strip arranged between the permanent magnets [(2)] and the inner circumferential regions of the outer cylinder [(3)] opposite to [these] the permanent magnets.

28. (Amended) Rotor according to claim 27, wherein the further filler [strips (21) consist] strip consists of an electrically conducting material and, for the formation of a damping cage, are connected at their ends to a flexibly constituted ring [(22)] within which the core [(1, 35)] is arranged.

29. (Amended) Rotor according to [one of claims 20-25, wherein it has] claim 20, further comprising a cage [(29)] of electrically conducting end rings [(30)] and

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longitudinal rods [(31)] with transverse grooves [(32)] for the distribution of the [adhesive] resin, the permanent magnets [(2)] being inserted into [the] said cage [(29)].

30. (Amended) Rotor according to [one of claims 20-28] claim 20, wherein the core [(35)] is formed by a metal sheet packet comprising a plurality of metal sheets arranged on a centering tube [(24) which], the centering tube [(24) has] having a plurality of holes [(25)], [and] wherein the metal sheets [(23) of the metal sheet packet at these holes (25)] have longitudinal slots [(26)] running in the radial direction and aligned with the holes [(25)].

31. (Amended) Rotor according to [one of claims 20-29] claim 20, wherein the core [(1)] is integral and has an internal space [(8)] from which [internal space (8)] a plurality of channels [(27)] run in a radial direction to the outside of the core [(1)].

32. (Amended) Rotor according to [one of claims 20-31] claim 20, wherein, for torque transmission from the core [(1, 35)] to the closure disks [(4, 5)], the core [part (1, 35)] has a polygonal recess [(18)] at each axial end, and each closure disk [(4, 5)] has a polygonal projection [(19)] projecting into the respective recess [(18)].

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33. (Amended) Rotor according to [one of claims 20-32] claim 20, wherein the core [(1, 35)] has a polygon-shaped outer circumferential surface, consisting of individual plane-surfaced surface portions [(17)], whereby the surface portions [(17)] correspond to the dimensions of the permanent magnets [(2)] abutting the same.

34. (Amended) Rotor according to [one of claims 20-29, wherein the metal sheets (38) of steel are] claim 20, wherein the core is formed by a metal sheet packet comprising a plurality of metal sheets and a plurality of shear bolts inserted at one end into the metal sheets [(23)] and at [the other] a second end into the closure disks [(4, 5)].